

**AUTOMATED COMPOSITE LAY-UP TO AN INTERNAL FUSELAGE
MANDREL**

ABSTRACT OF THE DISCLOSURE

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An aircraft part manufacturing device for automated composite lay up includes a mandrel tool having a an interior mandrel surface that conforms to an outside mold line (OML) of a part: to be manufactured. One or more circular rings surround the mandrel and are attached to the mandrel. The circular rings rotate supported by bearings in a bearing cradle so that the mandrel rotates concentrically with the circular rings about an axis of rotation passing through the center of the circular rings. A composite material delivery head delivers material directly to the outside mold line on the interior mandrel surface while the mandrel is rotated. A cantilever supported gantry beam supports the material delivery head inside the interior mandrel surface. A connecting mechanism connects the material delivery head to the gantry beam and provides motion of the material delivery head relative to the interior mandrel surface.

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